

## Manual for N-Pita Product in Revit

*An internal manual for Nohara employees working with N-pita drawing creation*

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Nohara VDC

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## i. Abstract

The **Manual for N-pita product** at LOD 300 is targeted to architects and designers who are able to download the Revit wall types from the Nohara BIM Object website and run a simple Dynamo script. The guide explains how to use the Dynamo script in order to automatically adjust the dimensions of the N-pita elements.

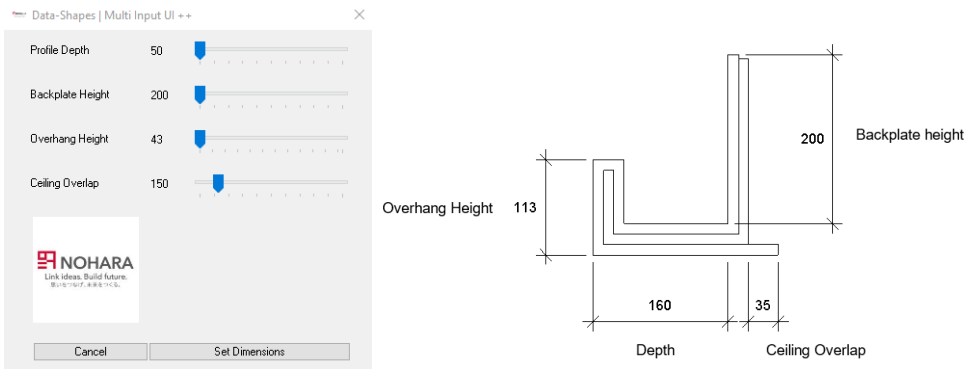


Figure 1 - Quickly set profile parameters using Nohara Data-Shapes UI.

## ii. Introduction

N-pita is an indirect lighting unit that can be installed with a simple construction method to ceilings.

The objective is to create a precise BIM-content model with manufacturing data for prefabrication. Based on the architect model the manufacturer will later be able to create precise element parts, in order to create fabrication drawings and a detailed cost estimation. It is therefore essential that the architect specifies the LOD300 model as accurately as possible.

For the creation of N-pita the following software will be used:

1. Depending on Revit Version, 2019, 2020, 2021, the user is prompted to download appropriate Dynamo script to model the profile in LOD300 level.
2. Dynamo Version 2.0.4 or later is required for running the interface for the user to configure the dimensions of the profile.
3. Custom Packages for Dynamo – Data-shapes and Rhythm are required and installation instructions can be found in step 1.1.

A video under this link shows how to run this workflow.

| Name                   | Status | Date modified    | Type        |
|------------------------|--------|------------------|-------------|
| Nohara N-Pita Dynamo   | ✔      | 20/01/2021 15:29 | File folder |
| Nohara N-Pita Template | 🔄      | 20/01/2021 15:42 | File folder |

Figure 2 - File Folder N-pita setup

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# 1 Setting up project & N-Pita LOD300

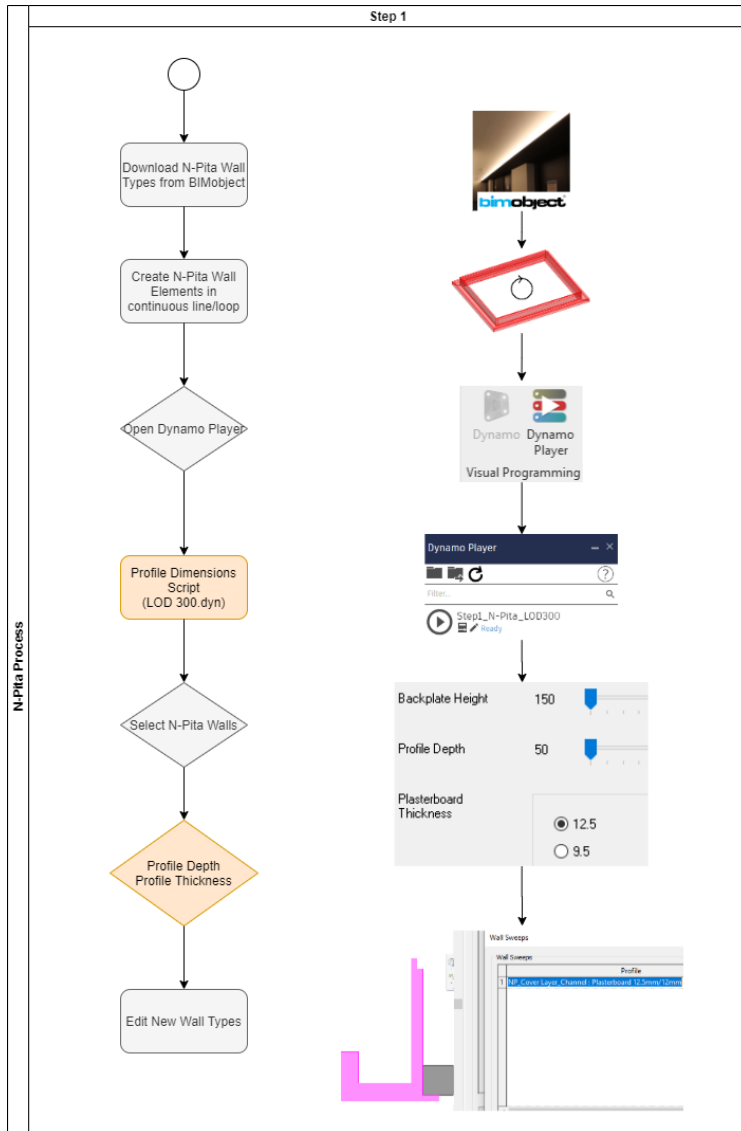


Figure 3: Step 1 workflow Process

## Step 1.1: Installing Dynamo Packages

To access Dynamo in Revit, click **Manage** tab Visual Programming panel. Please use **Dynamo Version 2.0.4 or newer**. The Visual Programming panel has two options. Dynamo Player and Dynamo. Dynamo is the visual editor where you can troubleshoot any potential errors in the code. The Dynamo Player is a User interface used to run Dynamo scripts. It is only to "Play" the script (run the script). Given the Dynamo scripts are working correctly, please use **Dynamo Player**.

In order to run the N-pita scripts you need to install the following Dynamo packages. We also recommend installing Monocle package to check the versions of your packages.

### N-Pita\_LOD300\_Profile\_Config.dyn

-Rhythm v.2019.6.1 or newer

-Data-Shapes v.2019.2.1 or newer

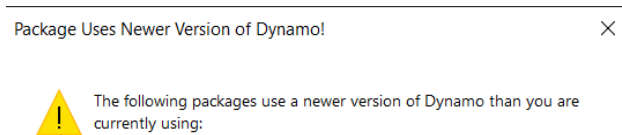
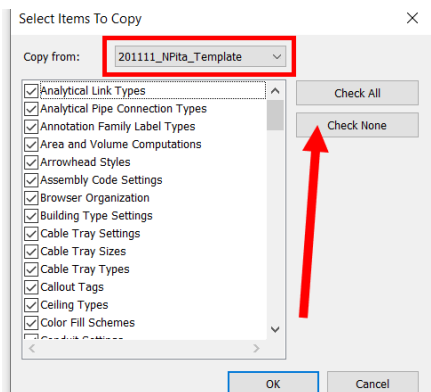
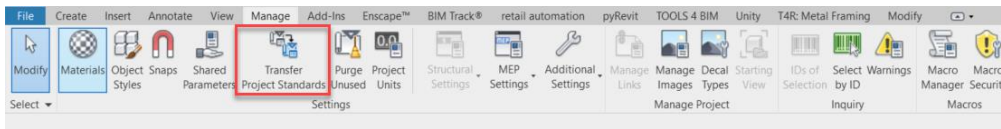


Figure 4 Error installing a Package

*If you get this message, it means that you are trying to install a package version which is newer than the version of Dynamo that you are currently using. "Cancel" and choose an older version.*

## Step 1.2: Transferring Project Standards

Now you will need the .rvt file with the Nohara N-pita Template wall types, materials and wall sweep types.



You can use an Existing or a New Project in Revit. Now open 201111\_N-Pita Template file in Revit alongside your project. Go back to your project and from **Manage Tab** select **Transfer Project Standards**. In selection window make sure that elements which are going to be copied are copied from the latest template file. Click **Check None** to **uncheck** elements from the list. After this step is done **check** following items from the list:

- Materials
- Wall Sweep Types
- Wall Types

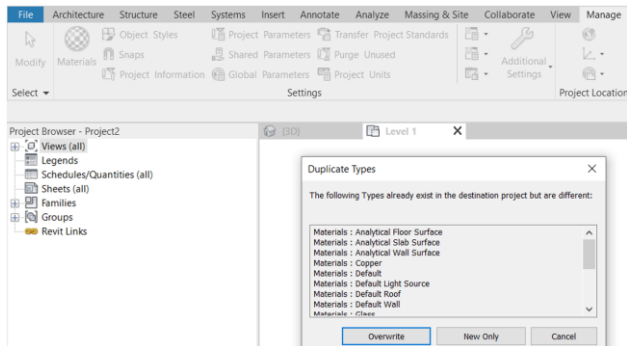


Figure 6 -Duplicate Types Window

Press "New only", to ensure you don't overwrite your existing materials.

### Step 1.3: Drawing N-Pita Geometry

Choose a desired N-Pita type (K-Type, Steel, Channel) which can be found in Walls Tab in Revit Toolbar. Next, draw wanted shape in area where N-Pita should be designed. Make sure that the shape you draw is a continued line and all in one direction.



Figure 7 Drawing Order

Always draw in order. Either Clockwise, or Counterclockwise. Try to always draw clockwise or counterclockwise lines to later have less things to change manually.

In **Base Constraint** parameter choose the desired Base Constraint for the level of placement and set **Unconnected Height**.

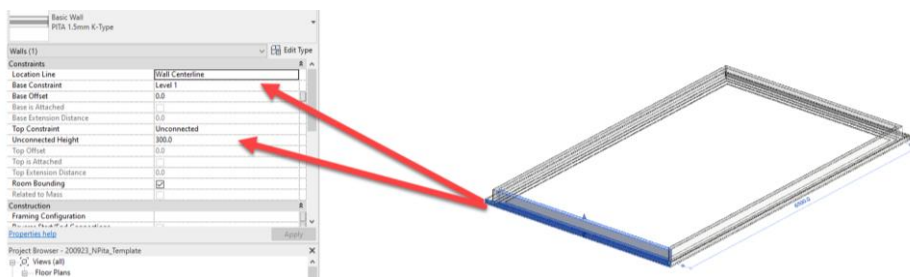


Figure 8 Check your wall properties

Make sure the location line is set to wall centerline, the top constraint is unconnected and the base offset is set to desired height offset from the floor.



Figure 9 - Profile Orientation

In order to change Profile Orientation from Outer to Inner profile or Inner to Outer please select it and press **Space**.

### Step 1.4: Create a Local file of the Dynamo Script

You will need to re-save all Dynamo scripts locally on your computer. It is a peculiarity of Dynamo, for Dynamo Player to work, first Dynamo script has to be saved locally to create link with the Dynamo player. So go ahead and open Dynamo and open each script and choose "save as" and re-save it.

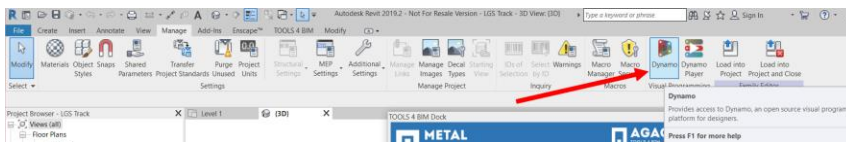


Figure 10 – Open Dynamo (not Dynamo Player)

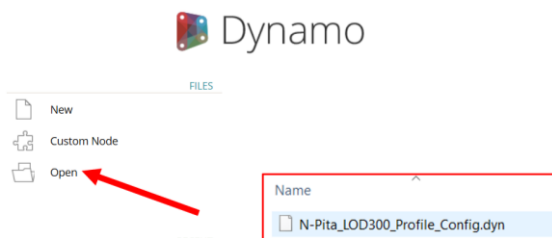


Figure 11 Open the script from the folder and save it locally.

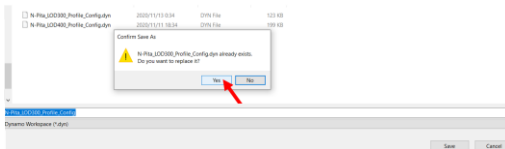


Figure 12 – Resave all scripts.

Under "File" -> choose "Save As" and save the script on the same folder on your desktop. After replacing the script in your folder you can close Dynamo.

### Step 1.5: Run Dynamo Player to change Profile Size

When creating a new project, please ensure that there is an empty parameter file which can be populated by the script. The LOD300 Step 1 script will add parameters automatically, but it must have a .txt empty file ready for it. To do that create a new shared parameter file and name it as you prefer.

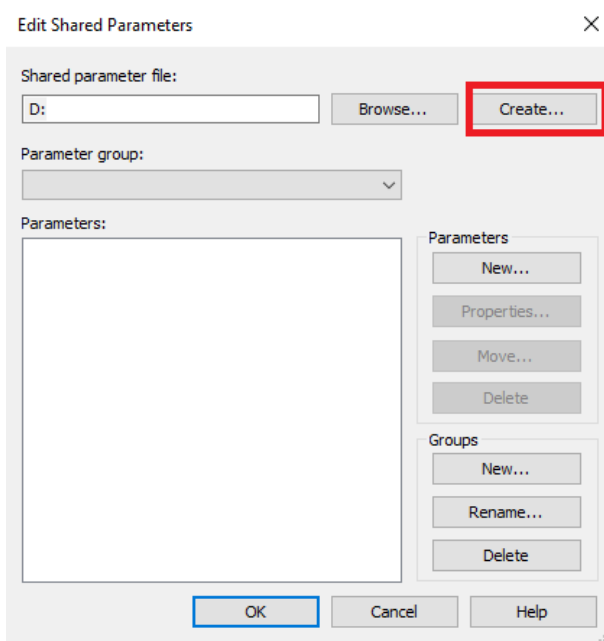


Figure 13 Add an empty shared parameter file to the project.

Now please open the **Dynamo Player** (Not **Dynamo**) in Revit.

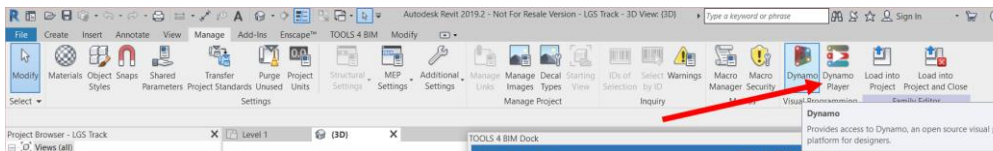


Figure 14 – Dynamo Player Location in “Manage” tab

By clicking Folder icon find your path to N-Pita scripts. Open the script **N-Pita\_LOD300\_Profile\_Config** from the **Nohara N-Pita Dynamo** folder.



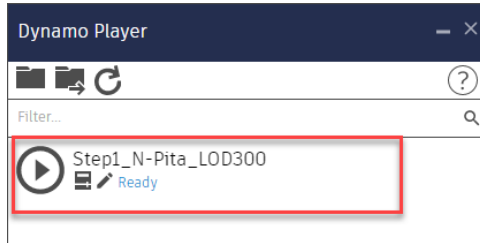


Figure 15 Dynamo Player in Revit

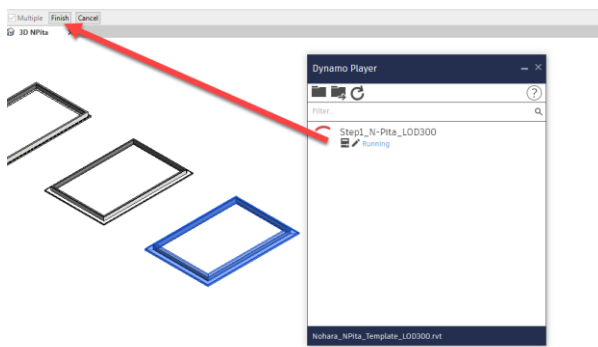


Figure 16 – Select all N-Pita wall profiles and press “Finish”

**Step 1.6: UI settings** In Dynamo Player click **Play Button** to run the script. It will trigger method to select element in Revit project. Select N-Pita Walls, after selection is done **Finish** selection by clicking button in left top corner.

Commented [AP1]: New double UI

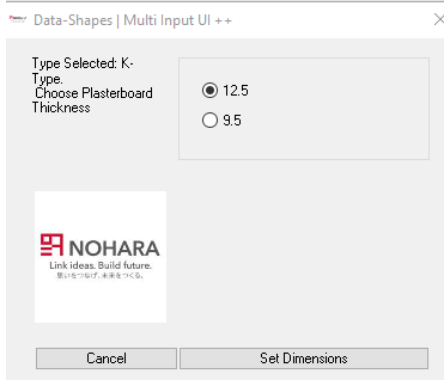


Figure 17 User Interface to set Dimensions

After the selection is made, configurator User Interface will pop up with an option to select a 12.5 or a 9.5mm plasterboard.

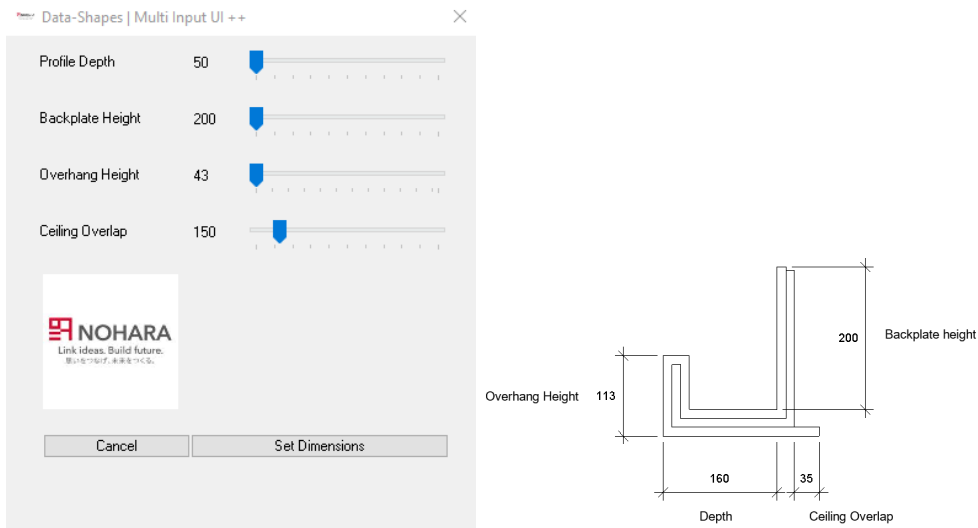


Figure 18 - User Interface to set Dimensions

The second window contains a **Profile Depth** slider which is representing N-Pita depth with minimum value of 50 mm maximum value based on type of the profile. The backplate height and other parameters can be set as referred on the illustration in Figure 18.

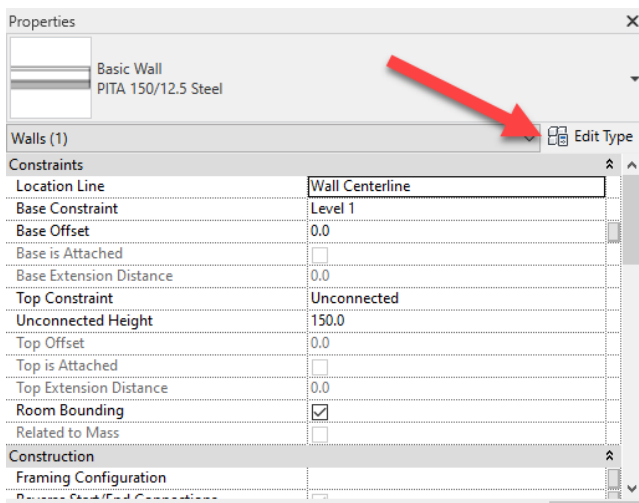


Figure 19 Edit Wall Types to change Sweep

After the Dynamo process is done, once again select recently made walls and in **Properties Browser** click **Edit Type** button.

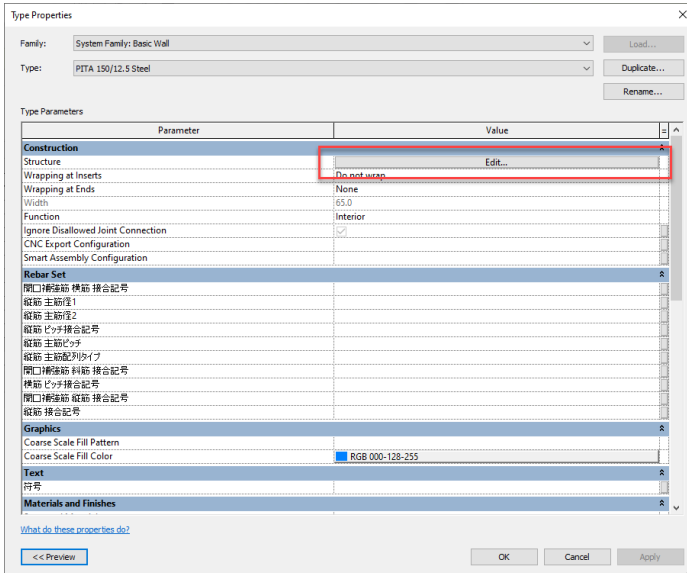


Figure 20 - Type Properties of a wall

After Type Properties window will show up find Edit button in Structure parameters. By clicking the button it will be possible to edit structure of the wall.

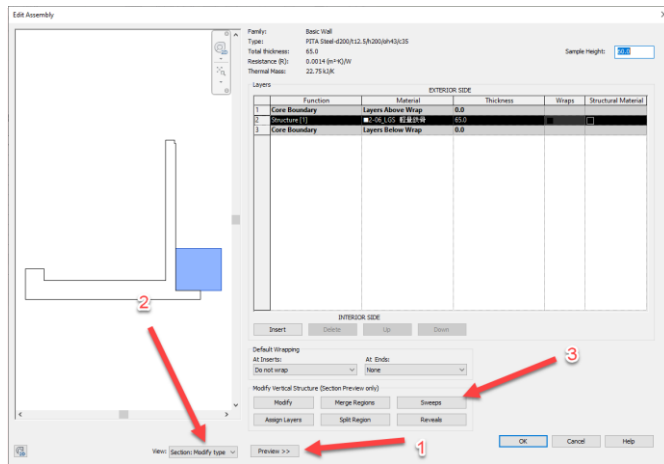


Figure 21 How to Access Sweep View

To access the sweep view, first, make sure that preview of the wall is on, by clicking **Preview** button (1). Like in the figure it should appear by the left of main window. Next (2) change **View** to **Section: Modify type attributes** to see model from cross section view. In last step find (3) **Sweep** button it will open sweep profiles edit mode window.

Commented [AP2]: This image needs updating (shows outdated profile & Family Type name)

Commented [AP3]: Update

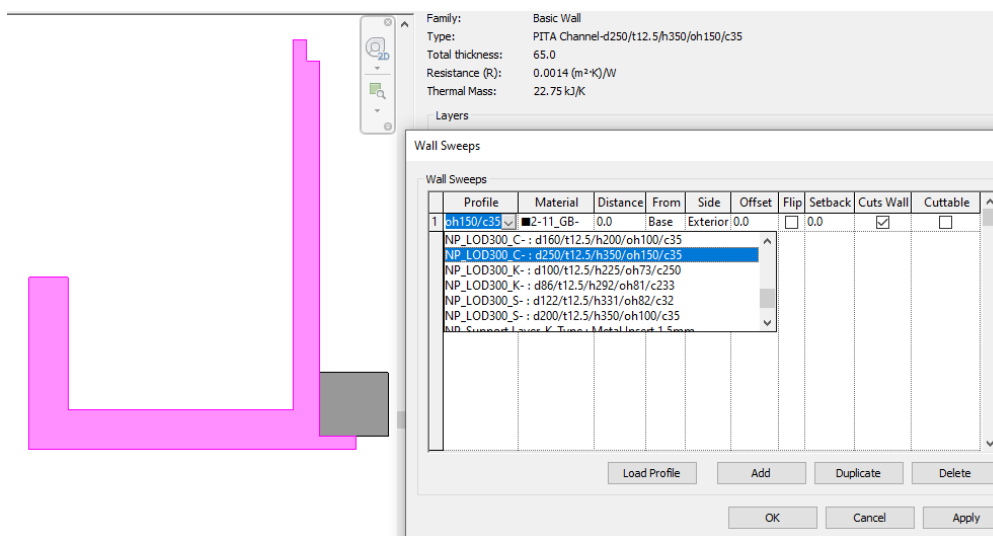


Figure 22 – Changing Profile Sweep within a wall

In **Profile** section choose right profile for NPita type from the drop down list. Make sure that profile name is matching the type of the wall family with the dimensions and the N-pita type (Steel, K-Type, Channel).